

NEW GENERA AND SPECIES OF AUSTRALIAN DROSOPHILIDAE (DIPTERA)

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Abstract

Bialba rotunda gen n., sp. n.; *Poliocephala microabdomina* gen. n., sp. n.; *Amiota bicolorata* sp. n.; *Drosophila tozana* sp. n.; *Eostegana bulla* sp.n.; and *Leucophenga candida* sp. n. are described from the Mt Tozer area of northern Queensland. The new genera appear to be most closely related to *Mycodrosophila* Oldenberg. A revised key to the Drosophilidae of the Iron Range area is presented.

Introduction

Worldwide, the Drosophilidae contain more than 2,500 described species, of which about 250 are Australian. The bulk of the Australian fauna is restricted to the rain forests of northern Queensland, apparently representing a “spillover” of the extremely rich, and as yet largely undescribed, tropical fauna of New Guinea and southeast Asia.

Several collections have been made in the past decade at particular northern Queensland sites, and new species have been recovered on each such occasion (Bock 1982, 1984; McEvey 1981; McEvey and Bock 1982). Several areas still, however, offer considerable promise for further collecting, especially the rich rain forests in the vicinity of Iron Range. A collection made in June-July 1986 by the CSIRO Division of Entomology near Mt Tozer in the Iron Range region yielded the new material described below.

Terminology follows that of Bock (1976) and subsequent papers. All specimens are in the Australian National Insect Collection, CSIRO, Canberra.

SUBFAMILY DROSOPHILINAE

Drosophila Fallén

Drosophila Fallén, 1823: 4. Type species *Musca funebris* F. (Europe), des. Zetterstedt, 1847: 2542.

Drosophila (*Hirtodrosophila*) *tozana* sp. n.

Type-QUEENSLAND: holotype ♂, 12.43S 143.17E, 9km ENE Mt Tozer, 5-10.vii.1986, D. H. Colless.

Distinguishing features—Pleura with broad dark longitudinal band above; mesonotum tan, darker medially; abdomen blackish; wing clear; anterior scutellar bristles weak.

Body length—2.4 mm.

Head—Artista large, with 5 rays above and 2 below plus large terminal fork. Width of front 1.4 times length, front tan in anterior third, darkened in posterior two thirds. Orbital bristles in ratio 3:1:4; anterior reclinate orbital very fine, slightly lateral to line joining other orbitals. Ocellar and postvertical bristles relatively long but fine; verticals a little stronger than posterior reclinate orbitals. 2nd and 3rd antennal segments dusky tan; 3rd segment small. Carina weak, narrow, low, tan; face otherwise weakly dusky tan. Eye large, bare, somewhat pear-shaped, narrower below. Palp tan. Cheek very narrow. Vibrissa rather weak.

Thorax—Mesonotum tan, weakly darkened in broad median longitudinal band limited by extended lines of dorsocentral bristles. Acrostichal hairs in 6 somewhat irregular rows in front of dorsocentral bristles, 4 rows between dorsocentrals. Ratio anterior: posterior dorsocentrals 0.4. Scutellum tan, darker centrally. Anterior scutellar bristles convergent, half length of posterior pair. Pleura tan below, broadly blackish above, colourations rather sharply demarcated, ca upper 80% of mesopleuron within darkened area. Haltere dusky. Legs pale tan; knees 2 and 3 slightly darkened.

Wing—Hyaline. Anterior crossvein very short. Anal vein developed. C-index 1.8; 4V-index 2.0; 5X-index 1.35; M-index 0.45. 3rd costal section with heavy setation on basal 0.45. Length 2.1 mm.

Abdomen—Tergite 1 tan. Tergite 2 tan in small median patch anteriorly, otherwise blackish. Tergites 3-6 blackish.

Notes

This species is clearly closely related to *D. mixtura* Bock. Although superficially very similar, they differ in a number of details, viz., in *D. tozana* the mesonotum is

paler than in *D. mixtura*, the upper pleural darkening is broader, the anterior crossvein is shorter, the carina is more developed, the arista is smaller, abdominal tergite 6 is dark (pale in *D. mixtura*), and the front is more acutely rounded on to the occiput. *D. mixtura* is known to congregate on the undersides of fleshy bracket fungi, where the males exhibit territorial and courting behaviour and may sometimes be collected in considerable numbers (behaviour shared with the more southerly *Hirtodrosophila* species *D. polypori* Malloch and *D. mycetophaga* Malloch). *D. tozana* is presently known only from a single specimen; it is tempting to speculate that further collecting may reveal a similar fungal association.

Etymology

From the type locality.

Poliocephala gen. n.

Type species *Poliocephala microabdomina* sp.n.

Body small; arista large, plumose; face weakly carinate; front prominent, largely grey; vibrissa single; mesonotum and scutellum velvety; acrostichal hairs in 2 rows; prescutellar bristles absent; wing without anal vein; discal and 2nd basal cells confluent; abdomen small.

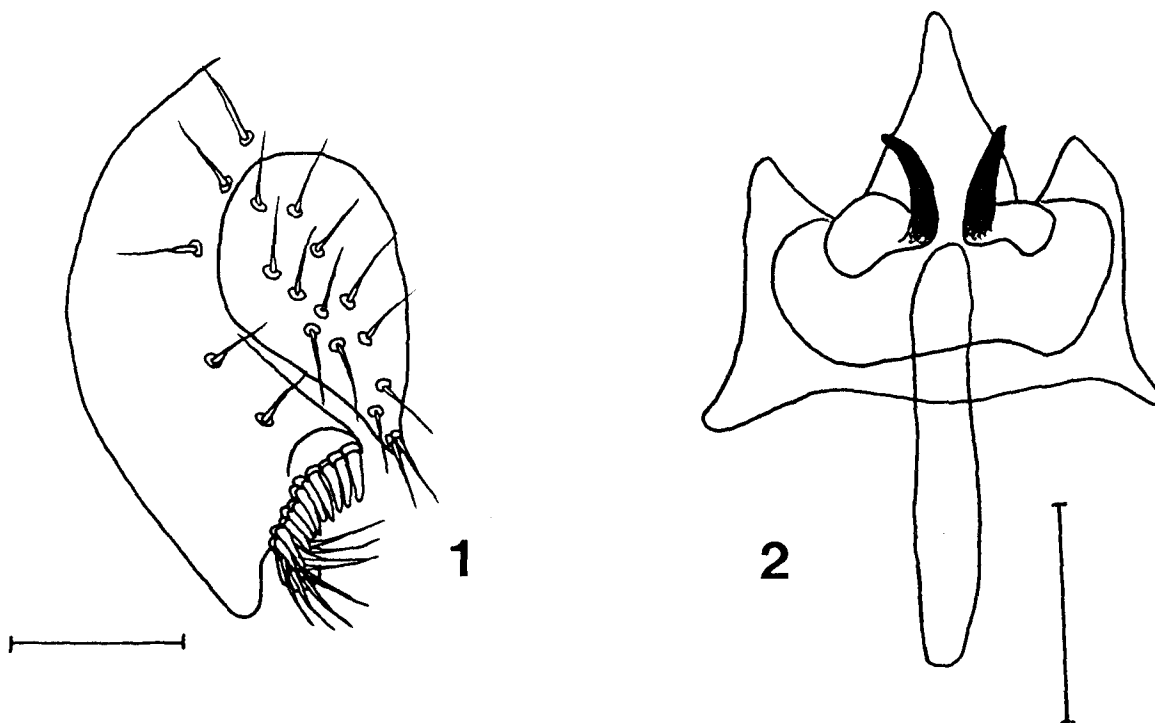
Poliocephala microabdomina sp. n. (Figs 1, 2)

Types—QUEENSLAND: *holotype* ♂, 12.44S 143.14E, 3km ENE of Mt Tozer, 28.vi.-4.vii.1986, malaise trap, D.H. Colless; *paratypes*: 1♂, 2♀♀, same data as holotype; 1♂, 1♀, 12.43S 143.18E, 11km ENE of Mt Tozer, 11-16.vii.1986, D.H. Colless.

Distinguishing features—As given in generic diagnosis above; front largely slate-grey, narrowly pale anteriorly.

Body length—1.2 mm. (holotype; paratypes similar or slightly smaller).

Head—Arista with 5 rays above and 3-4 below plus terminal fork. Width of front 1.6 times length, front tan in narrow anterior band, otherwise subshining slatey bluish-grey including ocellar triangle, latter slightly elevated. Occiput blackish. Orbital bristles rather small; proclinate and posterior reclinate bristles subequal; anterior reclinate orbital very small, lateral to proclinate orbital. Ocellar bristles rather small. Postverticals small and fine; verticals rather larger than other cephalic macrochaetae. 2nd antennal segment tan; 3rd segment small, rounded, dusky. Face narrow, slightly carinate, mid-brownish. Cheek curved, very narrow, barely widened in posterior corner. Vibrissa rather weak. Eye with strong fine pile.



FIGS (1-2)—*Poliocephala microabdomina*, male genitalia: (1) external; (2) internal. Scale 0.05 mm.

Thorax—Mesonotum entirely velvety blackish brown, darkening to blackish on scutellum. Acrostichal hairs sparse, large. Dorsocentral bristles rather small, anterior: posterior in ratio 0.7. Anterior scutellar bristles slightly divergent; posterior scutellars crossed. Pleura largely dark brownish, paler in longitudinal band across lower third of mesopleuron. Sternopleuron with 3 macrochaetae, 3rd rather larger than 1st and 2nd. Haltere pale tan. Legs brownish, femora darkest; preapical bristles present on tibiae 2 and 3; apical on tibia 2.

Wing—Hyaline, rather slender; 5th longitudinal vein weakened apically. C-index 1.15; 4V-index 1.9; 5X-index 3.2; M-index 0.7. 3rd costal section with heavy setation on basal 0.4. Length (holotype) 1.1 mm.

Abdomen—Small. Tergite 1 tan; tergite 2 tan anteriorly, blackish posteriorly; tergites 3-5 velvety blackish; tergite 6 tan.

Male genitalia—Figs 1, 2. Clasper with row of stout black teeth. Aedeagus strongly sclerotised, tapered apically; parandrite with very large black tooth.

Female genitalia—Egg guide well developed, apically tapered, with sparse marginal teeth.

Notes

P. microabdomina superficially appears reminiscent of most species of the genus *Mycodrosophila* Oldenberg in its dorsal thoracic and abdominal colouration, but differs from typical *Mycodrosophila* species in possessing a velvety thorax (shiny in *Mycodrosophila*) and 2 pairs of dorsocentral bristles (1 in *Mycodrosophila*), and in lacking the typical *Mycodrosophila* wing lappet. The unusual and striking frontal colouration of *P. microabdomina* is also unique. The species may be a specialised offshoot of *Mycodrosophila*. [cf. Okada (1986), where atypical species are discussed.]

Etymology

Generic name from the Greek, grey + head; specific name from the Latin, small + abdomen.

Bialba gen. n.

Type species *Bialba rotunda* sp. n.

Arista plumose; front with lateral white bands; orbital bristles on posterior half of front; vibrissa single; mesonotum shiny, dark, with 6 rows of acrostichal hairs and 2 pairs of dorsocentral bristles; prescutellars absent; scutellum rather bulbous, concolourous with mesonotum, with 2 pairs of macrochaetae; wing with weak anal vein; discal and 2nd basal cells confluent.

Bialba rotunda sp. n.

Type—QUEENSLAND: holotype ♀, 12.43S 143.17E, 9km ENE of Mt Tozer, 5-10.vii.1986, malaise trap, D.H. Colless.

Distinguishing features—As given in generic diagnosis above; white frontal bands extending on to antennae.

Body length—2.1 mm.

Head—Arista with 3 rays above and 2 below plus terminal fork; basal dorsal ray curved apically. Width of front equal to length; front bright orange tan between lateral white bands, latter tapered posteriorly leaving small dark posterolateral triangular area on each side of head (orbital bristles just within latter). Ocellar triangle small, elevated, darkened. Orbital bristles relatively small, almost in line, in ratio 4:1:3. Ocellar bristles about as long as proclinate orbitals. Postverticals displaced on to occiput. Vertical bristles larger than other cephalic macrochaetae. 2nd antennal segment tan medially, white laterally; 3rd segment large, entirely snowy white. Face dirty tan, with rather weak carina bearing fine median ridge. Cheek slightly curved, narrow, only slightly widened in posterior corner. Palp dark tan. Eye with short pile.

Thorax—Mesonotum, scutellum and pleura shiny brownish black with metallic tinges. Mesonotum with sparse pale very fine scales in median longitudinal band enclosing middle 4 rows of acrostichals. Ratio anterior: posterior dorsocentral bristles 0.65. Anterior scutellar bristles divergent; posterior bristles crossed. Sternopleuron with 2 macrochaetae, posterior bristle larger. Haltere pale tan. Legs brownish, darkest on femora; preapical bristles on tibiae 2 and 3; apical on tibia 2.

Wing—Hyaline; 5th longitudinal vein weakened apically. C-index 1.5; 4V-index 2.3; 5X-index 2.0; M-index 0.8. 3rd costal section with heavy setation on basal 0.6. Length 1.8 mm.

Abdomen—Brownish black with metallic tinges; weak scales present in anterior median basal patches on tergites 1-3.

Female genitalia—Egg guide strongly sclerotised, slender, elongate, with several long hairs but without teeth.

Notes

Bialba appears to be related to *Mycodrosophila* in possessing a rounded shiny mesonotum and a prominent strongly rounded scutellum, but differs from typical *Mycodrosophila* in that its scutellum is not velvety, in its possession of 2 pairs of dorsocentral bristles, and in lacking a costal lappet. The prominent white cephalic stripes are reminiscent of *Phorticella* Duda, but in species of the latter genus the thorax is also striped. *Bialba* may (as postulated above for *Poliocephala*) be a specialised offshoot of *Mycodrosophila*.

Etymology

Generic name from the Latin, two + white; specific name from the Latin, round. The generic name is considered feminine.

SUBFAMILY STEGANINAE

Leucophenga Mik

Leucophenga Mik, 1886: 317. Type species *Drosophila maculata* Dufour (Europe), orig. des.

Leucophenga candida sp. n.

Type—QUEENSLAND: holotype ♂, 12.43S 143.18E, 11km ENE Mt Tozer, 11-16.vii.1986, at light, D.H. Colless.

Distinguishing features—Front pale, narrow; dorsal thorax and anterior abdomen with dense silvery pollinosity; wing patterned; abdominal tergites 4-5 with extensive darkening.

Body length—2.5 mm.

Head—Arista with 4 rays above and 2 below plus small terminal fork. Width of front 0.6 times length, front very pale tan; ocellar triangle small, elevated, darkened. Orbital bristles in ratio 1:1:2, in line, anterior reclinate orbital closer to proclinate than to posterior reclinate orbital. Postvertical bristles well developed. 2nd and 3rd antennal segments pale tan. Face pale tan. Palp tan. Cheek curved, extremely narrow.

Thorax—Mesonotum and scutellum tan below dense silvery pollinosity. Pleura entirely tan, a little darker posteriorly. Haltere tan. Acrostichal hairs in ca 8 irregular rows in front of dorsocentral bristles, 4-6 rows between dorsocentrals. Ratio anterior: posterior dorsocentrals 0.6. Legs entirely tan.

Wing—Hyaline with weak darkening basally, prominent large dark spot at end of 2nd longitudinal vein, faint darkening about end of 3rd longitudinal vein, and well-defined dark patches about anterior and posterior crossveins, latter extending more weakly along apical portion of 5th longitudinal vein. C-index 1.35; 4V-index 1.3; 5X-index 1.0; M-index 0.55. 3rd costal section with heavy setation on basal 0.55. Length 1.9 mm.

Abdomen—Tergites 1-3 tan, 2-3 with dense silvery pollinosity dorsally. Tergites 4-5 largely blackish, each with anterior pair of submedian tan spots, latter appreciably larger on tergite 5.

Notes

This species appears to be allied to the members of the *subpollinosa* species group discussed by Okada (1987), but differs from the latter in possessing more strongly developed postvertical bristles, in lacking pleural darkening, and in its wing pattern. The wing pattern is very similar of that of *Leucophenga domanda* Bock, 1984 (figured in Bock, 1979, as "sp. B"), but in many other respects the 2 species are quite dissimilar. Given the polymorphisms known to exist in many *Leucophenga* species, it is likely that the female of *L. candida*, when discovered, will prove to lack, or possess appreciably weaker, general body pollinosity than the male described above.

Etymology

From the Latin, bright.

Amiota Loew

Amiota Loew, 1861: 230. Type species *A. leucostoma* Loew (U.S.A.), des. Coquillett, 1910: 505.

***Amiota (Amiota) bicolorata* sp. n.**

Type—QUEENSLAND: *holotype* ♀, 12.43S 143.18E, 11km ENE Mt Tozer, 11-16.vii.1986, at light, D.H. Colless.

Distinguishing features—Thorax pale-mid brown, with white spots typical of subgenus; prescutellar bristles absent; abdomen black posteriorly and laterally, otherwise tan.

Body length—3.0 mm.

Head—Arista with 4-5 rays above and 2-3 below plus terminal fork. Width of front 0.95 times length; front tan, darker posteriorly; ocellar triangle small, elevated, infuscated. Orbital bristles in line, anterior reclinate only slightly smaller than proclinate and posterior reclinate, much closer to former than to latter. Ocellar and vertical bristles subequal. Postverticals weak, displaced on to occiput. 2nd antennal segment tan; 3rd segment dusky tan. Carina weak, low, nose-like. Face tan above transverse milky-white band. Palp tan. Cheek pale tan, narrow, not widened in posterior corner. Vibrissa weak.

Thorax—Mesonotum shiny dark tan. Acrostichal hairs in numerous rows. Anterior dorsocentrals 0.6 times length of posterior dorsocentrals. Prescutellar bristles absent (specimen pinned such that prescutellar region of thorax partly damaged, but no trace of prescutellar bristles or their sockets present in cuticle). Scutellum concolourous with mesonotum. Anterior scutellar bristles appreciably larger than posterior scutellars, former widely divergent. Pleura tan, dusky above, with typical white spots. Haltere pale tan. Legs tan.

Wing—Hyaline. C-index 1.2; 4V-index 2.8; 5X-index 1.75; M-index 0.8. 3rd costal section with heavy setation on basal 0.6. Length 2.6 mm.

Abdomen—Tergite 1 pale tan. Tergite 2 tan above, black laterally. Tergite 3 largely tan above, black laterally. Tergite 4 tan medially, black laterally. Tergite 5 (last visible tergite) shiny black. Pale area on dorsum of abdomen in triangular patch, not very sharply demarcated from posterior and lateral black colouration. Incurved portions of tergites 2-5 shiny black.

Notes

The species is similar to *A. albomaculata* (Duda), but differs from the latter in its colouration (body entirely dark in *A. albomaculata*), possession of postvertical microchaetae (postverticals absent in *A. albomaculata*) and especially in its lack of prescutellar bristles (which are well developed in *A. albomaculata*). Possession of the latter bristles is regarded as a generic attribute in *Amiota* and indeed as a subfamilial attribute for the Steganinae, but a few exceptional species (such as *Crincosia lawgana* Bock) lacking prescutellars are known. There is no doubt that the present species is otherwise a typical member of the genus *Amiota*.

Etymology

From the Latin, two colours.



FIG 3—*Eostegana bulla*, wing.

Eostegana Hendel

Eostegana Hendel, 1913: 390. Type species *E. biroi* Hendel (New Guinea), orig. des.

***Eostegana bulla* sp. n. (Fig. 3)**

Types—QUEENSLAND: *holotype* ♀, 12.43S 143.17E, 9km ENE Mt Tozer, 5-10.vi.1986, malaise trap, J.C. Cardale; *paratypes*: 1♀, 12.43S 143.17E, 9km ENE Mt Tozer, 5-10.vi.1986, D.H. Colless, 1♂, 12.44S 143.14E, 3km ENE Mt Tozer, 28.vi-4.vii. 1986, D.H. Colless.

Other material examined—QUEENSLAND: 1 ♂, same data as holotype (headless).

Distinguishing features—Scutellum apically pale; carina large, bulbous; 3rd antennal segment very long; arista large, with apical rays in several planes.

Body length—3.6 mm (holotype); 3.2-3.7 mm (paratype range).

Head—Arista long, with 7 basal dorsal rays and *ca* 10 apical rays variously placed about axis, latter ending in typical terminal fork. Width of front 1.15 times length; front mid-brownish, darker around triangle extending forward from anterior ocellus, paler around orbital bristles, latter almost in line, in ratio *ca* 3:2:3, anterior reclinate closer to proclinate than to posterior reclinate. Ocellar and vertical bristles large, subequal; postverticals fine. 2nd and 3rd antennal segments dark brownish; 3rd segment greatly elongated, almost as long as arista. Face mid-brownish; carina greatly enlarged, globular, filling entire face. Palp large, yellowish, with dark brown patch basally. Cheek very narrow, barely widened in posterior corner.

Thorax—Mesonotum mid to dark brown, paler laterally especially about humeral calli. Acrostichal hairs in 8-10 rows in front of dorsocentral bristles, *ca* 8 rows between dorsocentrals. Anterior dorsocentrals 0.4 times length of posterior dorsocentrals, close to latter. Scutellum rather broadly rounded, largely pale, becoming brownish anteriorly. Anterior and posterior scutellar bristles subequal; small patch of microchaetae just anterior to base of each anterior scutellar bristle. Pleura dark brown, with 2 longitudinal or slightly oblique pale lines across mesopleuron and pale colouration along mesopleural-sternopleural suture. Haltere tan with some weak darkening. Legs dark brownish except for pale tarsi (uppermost portions of metatarsi dark); mid tibia with large apical bristle.

Wing—Strongly patterned in fashion typical of genus (Fig. 3), with numerous larger and smaller pale patches against dark background. Costa reaching apex of 4th longitudinal vein (although 3rd and 4th veins apically convergent). C-index 1.3; 4V-index 2.5; 5X-index 1.4; M-index 1.0. 3rd costal section with heavy setation on basal 0.65. Length (holotype) 3.2 mm.

Abdomen—Entirely dark brownish.

Notes

The species is typical of its genus in its large body size and dark brownish colouration (except the apically pale scutellum) and complex wing patterning. It is atypical in one aspect of its wing venation (costa reaching apex of 4th longitudinal vein), its greatly hypertrophied facial carina, its arista (with rays not confined to 1 plane) and its strongly elongated 3rd antennal segments. The latter characteristic is known in a few species of Ephydriidae but seems to be otherwise absent in Drosophilidae.

Etymology

From the Latin, a round swelling (after the bulbous carina).

Discussion

The material described above supplements that covered in McEvey and Bock (1982). The enlarged key provided below incorporates the new genera and species.

Key to the Drosophilidae of the Iron Range Area

- | | | |
|--------|--|-------------------------------------|
| 1. | Mesonotum with more than 2 pairs of dorsocentral bristles .. | 2 |
| | Mesonotum with 1-2 pairs of dorsocentral bristles | 3 |
| 2 (1). | Mesonotum with 3 pairs of dorsocentrals, anterior pair somewhat removed from posterior 2 pairs | Balara poecilithorax |
| | Mesonotum with 4 pairs of large dorsocentral bristles | Drosophila pseudotetrachaeta |
| 3 (1). | Mesonotum with 1 pair of dorsocentrals, or anterior pair extremely small. | 4 |
| | Mesonotum with 2 pairs of large dorsocentrals | 12 |

4 (3).	Scutellum strongly upturned, apically pointed	<i>Hypselothyrea claudensis</i>	
	Scutellum broadly rounded, not upturned (genus <i>Mycodrosophila</i>)		5
5 (4).	Wing without lappet		6
	Costa protruding at distal incision as large black lappet		7
6 (5).	Mesonotum brown	<i>M. heterothrix</i>	
	Mesonotum black	<i>M. separata</i>	
7 (5).	Head laterally expanded, noticeably broader than thorax		
	Head not laterally expanded	<i>M. grandifrons</i>	8
8 (7).	Wing with apical darkening	<i>M. stigma</i>	
	Wing without apical darkening		9
9 (8).	Thorax with some darkening on pleurotergite and lower part of pteropleuron		10
	Thorax entirely pale below level of wing articulation		11
10 (9).	Abdominal tergites 3-4 almost entirely black dorsally	<i>M. gordoni</i>	
	Abdominal tergites 3-4 pale tan with posterior and central black markings	<i>M. aqua</i>	
11 (9).	Wing with obvious dark transverse band behind lappet	<i>M. claudensis</i>	
	Wing at most with trace of dark band behind lappet	<i>M. helenae</i>	
12 (3).	Humeral calli with milky white spots	<i>Amiota bicolorata</i>	
	Humeral calli without milky white spots		13
13 (12).	Well developed prescutellar bristles present		14
	Prescutellars absent		55
14 (13).	Carina knife-like (genus <i>Stegana</i>)		15
	Carina, if present, not knife-like		16
15 (14).	Pleura with broad dark longitudinal band	<i>S. claudana</i>	
	Pleura entirely pale	<i>S. lamondi</i>	
16 (14).	Carina bulbous; wing with complex pattern, largely dark	<i>Eostegana bulla</i>	
	Carina not bulbous; wing not predominantly dark with complex pattern		17
17 (16).	Discal and 2nd basal wing cells separate [genus <i>Amiota</i> (part)]		18
	Discal and 2nd basal cells confluent		19
18 (17).	Arista entirely bare	<i>A. fasciata</i>	
	Arista with basal dorsal rays	<i>A. annulata</i>	
19 (17).	Carina rudimentary		20
	Carina well developed [genus <i>Drosophila</i> (part)]		34
20 (19).	Costa reaching apex of 4th longitudinal wing vein; 3rd costal section without ventral thorn-like spines	<i>D. jackeyi</i>	
	Costa reaching only to or just beyond apex of 3rd longitudinal vein; 3rd costal section with small ventral thorn-like spines (genus <i>Leucophenga</i>)		21
21 (20).	3rd abdominal tergite partly or completely white, desclerotised, short, usually largely concealed beneath 2nd tergite; 4th tergite appreciably longer than 3rd or 5th		22
	3rd abdominal tergite normal; 4th tergite about same length as 3rd and 5th		25
22 (21).	Wing with strong general infuscation	<i>L. gibbosa</i> ♂	
	Wing without general infuscation		22
23 (22).	3rd abdominal tergite not entirely desclerotized, with brownish colouration and several bristles in posterior corners	<i>L. janicae</i> ♂	
	3rd abdominal tergite entirely desclerotised, white and devoid of bristles		24
24 (23).	Scutellum with basal black spots	<i>L. scutellata</i> ♂	
	Scutellum without basal black spots	<i>L. albofasciata</i> ♂	
25 (21).	Wing hyaline, with small transverse basal black band	<i>L. subpollinosa</i>	
	Wing not patterned as above		26

26 (25).	Pleura with dark lateral stripe	L. zebra
	Pleura without lateral stripe	27
27 (26).	Wing with distinct pattern	28
	Wing without pattern	30
28 (27).	Wing with large weakly darkened patch about apical half of 2nd longitudinal vein	L. ornata
	Wing with strongly darkened patch at end of 2nd longitudinal vein	29
29 (28).	Thorax with dense silvery pollinosity	L. candida
	Thorax not pollinose	L. lynettiae
30 (27).	Abdominal tergites 3-5 tan with small median black spots; tergites 4-5 with additional lateral spots	L. bellula
	Abdominal pattern not as above	31
31 (30).	Scutellum with basal black patches	L. scutellata ♀
	Scutellum without basal black patches	32
32 (31).	Wing infuscated	L. gibbosa ♀
	Wing hyaline	33
33 (32).	Abdominal tergites 3-5 tan with apical black bands of near uniform width	L. janicae ♀
	Abdominal tergites 3-5 black with lateral (tergite 3) or submedian tan patches	L. albofasciata ♀
34 (19).	Wing patterned	D. pictipennis
	Wing not patterned	35
35 (34).	Scutellum with several fine hairs in addition to usual 4 macrochaetae	D. novoguineensis
	Scutellum bare apart from 4 macrochaetae	36
36 (35).	Arista consisting only of axis with single dorsal ray, axis ending in large terminal fork	D. moana
	Axis of arista with several rays	37
37 (36).	Mesonotum patterned	38
	Mesonotum unicolourous, almost unicolourous or with different colouration on humeral calli only	44
38 (37).	Scutellum with pale spots basally and apically	39
	Scutellum unicolourous, or paler apically only	40
39 (38).	Mesonotum dark with paler longitudinal streaks	D. cancellata
	Mesonotum with irregular, occasionally coalescing longitudinal dark brown stripes	D. glauca
40 (38).	Mesonotum tan with longitudinal dark brown stripes of uniform width	D. eluta
	Mesonotum otherwise patterned	41
41 (40).	Carina with dark transverse band	D. paracultello
	Carina of uniform colouration	42
42 (41).	Carina dark brown	D. brunnea
	Carina pale tan	43
43 (42).	Face entirely pale tan	D. variata
	Carina pale tan; face otherwise darkened	D. cultello
44 (37).	Anterior scutellar bristles <i>ca</i> 1/2 length of posterior scutellars	D. bryani
	Anterior scutellars about as long as posterior scutellars	45
45 (44).	Mesonotum blackish or very dark blackish brown	46
	Mesonotum pale tan to mid-brownish	48
46 (45).	C-index <i>ca</i> 1.0	47
	C-index <i>ca</i> 1.6	D. altera
47 (46).	Prescutellar bristles much weaker than anterior dorsocentrals	D. fungi
	Prescutellars larger than anterior dorsocentrals	D. metaxa
48 (45).	Pleura appreciably darker than mesonotum	49
	Pleura not darkened	50
49 (48).	Carina nose-like	D. melanopleura
	Carina broad and flat, lateral and ventral margins squared	D. oenops
50 (48).	Fringe of heavy bristles on 3rd costal section of wing almost entire	D. fimbriata

- Fringe of heavy bristles on 3rd costal section not > 0.8
length of section 51
- 51 (50). C-index *ca* 1.2 **D. kennedyi**
C-index 2.0 or greater 52
- 52 (51). C-index *ca* 3.1 **D. nimia**
C-index 2.0-2.3 53
- 53 (52). Abdomen uniformly tan **D. concolor**
Abdominal tergites with apical black bands 54
- 54 (53). Abdominal tergites with broad apical bands **Drosophila** sp. A
Tergites with narrow apical bands **Drosophila** sp. B
- 55 (13). Costa protruding at distal incision as large black lappet 56
Wing without lappet 57
- 56 (55). Mesonotum tan with darkening in median longitudinal band **D. lappetata**
Mesonotum with complex pattern of pale and dark areas **Paramycodrosophila diversicrus**
- 57 (55). Frons highly polished, with metallic sheen 58
Frons not highly polished, without metallic sheen 62
- 58 (57). Wing with transverse basal black band **Lissocephala metallescens**
Wing entirely clear 59
- 59 (58). Abdomen globose, broader than thorax **Sphaerogastrella javana**
Abdomen not globose, not broader than thorax (genus *Liodrosophila*) 60
- 60 (59). Acrostichal hairs absent **L. vitrea**
Acrostichals present 61
- 61 (60). Abdomen black **L. moyae**
Abdominal tergites 3-6 tan, tergites 3-4 with apical black bands **L. lutea**
- 62 (57). Front flat, square or rectangular; ocellar bristles beside anterior
ocellus, outside ocellar triangle (genus *Nesiodrosophila*) 63
Front not as above; ocellar bristles behind anterior ocellus,
within triangle 64
- 63 (62). Mesonotum with prominent silvery greenish pollinosity **N. argentea**
Mesonotum dark brownish, without pollinosity **N. pectinata**
- 64 (62). Proboscis very heavily sclerotised, unusually long **Zygothrica samoensis**
Proboscis not unusually heavily sclerotised or long 65
- 65 (64). Front broad; anterior reclinate orbital bristle minute or absent;
anterior dorsocentral bristles large, close to transverse suture
(Genus *Microdrosophila*) 66
Anterior reclinate orbital usually well developed; anterior
dorsocentral bristles close to posterior dorsocentrals 68
- 66 (65). Fringe of heavy bristles on 3rd costal section of wing entire **M. takadai**
Fringe of heavy bristles on 3rd costal section of wing not entire
(up to 0.95) 67
- 67 (66). Mesonotum dark brown; pleura dark brown above abruptly
changing to pale tan below **M. hasta**
Mesonotum tan; upper pleura weakly and unevenly darkened,
lower pleura becoming paler **M. pleurolineata**
- 68 (65). Orbits and elongated 3rd antennal segments snowy white **Bialba rotunda**
Orbits and 3rd antennal segments not white 69
- 69 (68). Front largely grey; mesonotum and scutellum velvety **Poliocephala microabdomina**
Front not grey; mesonotum and scutellum not velvety [genus
Drosophila (part)] 70
- 70 (69). 3rd antennal segment with several very long hairs in addition
to usual pubescence 71
3rd antennal segment with pubescence only 75
- 71 (70). Mesonotum blackened 72
Mesonotum not blackened 73
- 72 (71). Abdominal tergites 3-4 with apical black bands **D. baechlii**
Abdomen entirely pale **D. menisgra**

- 73 (71). C-index *ca* 1.0; carina very large *D. danielae*
 C-index *ca* 1.6-1.7; carina small, obsolete below 74
- 74 (73). Body entirely tan; wing clear *D. hirtominuta*
 Body mid-brownish; abdominal tergites 2-5 with darker apical
 bands; wing with brownish tinge *D. trifurca*
- 75 (70). Fore femur with row of strong peg-like setulae on inner side 76
 Fore femur without peg-like setulae 77
- 76 (75). Male front with milky white orbital pollinosity *D. sulfurigaster sulfurigaster*
 Milky white pollinosity on male front entire *D.? kohkoa*
- 77 (75). Carina large, broad, flat, wedge-shaped 78
 Carina, if present, not as above 79
- 78 (77). Body entirely shiny dark brownish *D. persicae*
 Male abdomen black; female abdominal tergites tan with
 darker apical bands *D. rubida*
- 79 (77). Carina absent, or consisting of no more than small low ridge 80
 Carina well developed 84
- 80 (79). C-index *ca* 1.0 81
 C-index *ca* 2.0 82
- 81 (80). Humeral calli whitened *D. tricolora*
 Humeral calli not whitened *D. durantae*
- 82 (80). Pleura broadly dark above, pale below 83
 Pleura almost entirely darkened *D. nigriventer*
- 83 (82). Wing with weak uniform brownish tinge *D. albiventer*
 Wing hyaline *D. tozana*
- 84 (79). Male fore leg without sex-comb *D. ironensis*
 Male fore leg with sex-comb or at least several large teeth
 on metatarsus 85
- 85 (84). Sex-comb consisting of large bushy brushes on 1st 2 tarsal
 segments *D. scopata*
 Sex-comb consisting of blackened teeth 86
- 86 (85). Sex-comb consisting only of 1-2 very large bristles apically on
 metatarsus *D. denticulata*
 Sex-comb more extensive 87
- 87 (86). Sex-comb consisting of transverse rows of bristles on 1st
 2 tarsal segments 88
 Sex-comb longitudinal or oblique 89
- 88 (87). Sex-comb consisting of 2 rows of bristles on metatarsus and 1 row
 on 2nd tarsal segment *D. pseudoananassae*
 Sex-comb consisting of 5 rows of bristles on metatarsus and 3-4
 rows on 2nd tarsal segment *D. ananassae*
- 89 (87). Sex-comb longitudinal along entire lengths of metatarsus and
 2nd tarsal segment *D. birchii*
 Sex-comb consisting of oblique comb on metatarsus and 1-2
 apical bristles on 2nd tarsal segment *D. bipectinata*

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